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Remarks on the Problem of the Phase Modulation Linearity in a Travelling-wave Tube (Permactron)

these are characterised by transfer coefficients σ'_1 and σ''_1 and reflection coefficients s'_1 and s''_1. Multiple reflections take place between the two discontinuities; this effect is known as "echo in long lines". This effect can be analysed as follows (Fig. 1); a sinusoidal signal of unit amplitude propagates along the input line; at the transformation quadripole 1 the signal decreases by $\exp(\gamma_1, \ell_1)$ and a portion of this signal propagates in the forward direction, while a fraction of it is reflected towards the source. In the same way, the signal propagates in the second line and in the terminating line. In general, it is necessary to consider multiple reflection of the signal in the lines and the overall transfer function of the system can be expressed as:

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$$\sigma = \sigma_1'\sigma_2' \exp(\gamma_1\ell_1 + \gamma_2'\ell_2' + \gamma_3\ell_3)\left\{1 + \left[s_2's_1'' \exp(\gamma_2''\ell_2'' + \gamma_2'\ell_2')\right] + \right.$$
$$\left. + \left[s_2's_1'' \exp(\gamma_2''\ell_2'' + \gamma_2'\ell_2')\right]^2 + \cdots\right\}. \qquad (1)$$

In general, it is sufficient to consider only the first two terms of this expression, so that Eq. (1) can be written as Eq. (2). This can be further written as Eq. (5). The relationship between the electron velocity and the accelerating voltage in a travelling-wave tube is given by:

$$v = \sqrt{2\frac{e}{m}U} = 5.94 \cdot 10^{-5}\sqrt{U} \quad [\text{m/s; V}]. \qquad (7)$$

The phase shift of a signal during its passage through the helix is expressed by:

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$$\varphi_2' = \beta_2' \ell_2' = \frac{\omega}{v} \ell_2' = 1.684 \cdot 10^{-6} \omega \ell_2' U^{-1/2} \qquad (8)$$

where ℓ_2' is the axial length of the helix. The phase shift can also be defined by:

$$\varphi_2' = 2\pi N \qquad (9)$$

where $N = \ell_2'/\lambda_v$ is the electrical length of the tube expressed in terms of the wavelength in the helix. If the accelerating voltage changes by ΔU in the vicinity of the optimum voltage U_o, the phase changes by $\Delta\varphi$; these changes are related by:

$$\frac{\Delta\varphi}{\Delta U} = -\pi \frac{N}{U_c} \qquad (12) .$$

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This expression gives the slope of the phase-modulation characteristic. Now Eq. (5) can be rewritten as Eq. (14) by introducing the notation defined by Eqs. (13a) and (13b). Eq. (14) expresses the transfer function as a sum of two vectors (Fig. 2). The first vector A represents the transfer function of an ideal tube without discontinuities; vector B has a smaller amplitude than that of A and introduces a wavelike distortion into the modulation characteristic of the tube (Fig. 3a). The vector B determines the magnitude of the characteristic nonlinearity and it is almost independent of the accelerating voltage. The phase characteristic can now be expressed by Eq. (16). The formulae were checked experimentally by means of the equipment shown in the block diagram of Fig. 4. In this the travelling-wave tube operated at frequencies from 4.4 to 5.0 Gc/s. The accelerating voltage contained a modulating component ranging from 2 to 5 V at 2 Mc/s. The output-signal therefore had a very low modulation index. The results obtained from the experimental investigation are shown on the plate of p.516c.

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The experiment is in good agreement with the formulae. The author thanks Jan Vrba for encouragement and fruitful discussions and Hana Minarikova for help in the measurements. There are 9 figures and 5 references: 3 English, 1 German and 1 Czech.

ASSOCIATION: Výzkumný ústav pro sdělovaci techniku A.S. Popova, Praha (A.S. Popov Telecommunications Research Institute, Prague)

Card 6/6

NEMECEK, Jan, inz.; HORNA, Jan, inz.

Second international conference on centimetre wave communications.
Slaboproudy obzor 23 no.9:546-547 S '62.

HORNA, Jan, ing.; STRANAK, Fr., ing., CSc.

Microwave filters with quarter-wave bonds; design of waveguide filters from resonance pins. Slaboproudy obzor 24 no.12:729 D'63.

ACCESSION NR: AP4029390 Z/0039/64/025/004/0186/0192

AUTHOR: Horna, Jan (Gorna, Y.)(Engineer)

TITLE: Properties of the Czech 31SE1 output traveling wave tube

SOURCE: Slaboproudy obzor, v. 25, no. 4, 1964, 186-192

TOPIC TAGS: traveling wave tube, TWT, reflection, internal reflection, amplification, amplification stability, relay link, intrastage link, intrastage relay, amplifier, 31SE1 traveling wave tube, vacuum tube

ABSTRACT: The Czech-made 31SE1 traveling-wave tube designed at VUVET (Scientific Institute for Communications Technology) for use in intra-state radio relay links within the 4.35 to 5.0 Gc/sec range is described. The characteristics given include: accelerating potential -- 1650 v, amplification per pitch of the helix -- 2 db, and axial length of helix -- 15 cm. Amplification varies 2 db in the 4.35 to 5.3 Gc range when the excitation is 5 w and standing wave ratio in the latest models is better than 1.5 in this range. Mid-band phase modulation coefficient is 0.0336 rad/v, the input signal phase being easily modulated by the voltage applied to the helix. The c. 71/1961 and c. 85/1961 tubes have lives of 3050 and 4620 hours, respectively. Systematic specimen

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ACCESSION NR: 4029390

measurements were used as the basis. Some special features encountered in introducing the output traveling wave tube into intra-state relay links are described. Orig. art has: 13 graphics.

ASSOCIATION: Vyzkumny ustav pro sdelovaci techniku A. S. Popova, .Praha (Scientific Institute of Communications Technology)

SUBMITTED: 28Sep63 DATE ACQ: 01May64 ENCL: 00

SUB CODE: EC NO SOV REF: 000 OTHER: 022

Card 2/2

HORNA, Jan, inz.

Properties of an input traveling wave tube in combined transmission in a radio relay system. Sbor vak elektrotech 4:54-57 '64.

Noise factor of the 31 SE 1 output traveling wave tube. Ibid.: 58-64

1. Research Institute of Telecommunication Engineering, Prague.

HORNA, O.

Low-frequency electronic voltmeter with 6BC32 electron tubes. p.19.
(SDELOVACI TECHNIKA, Vol. 2, no. 1, Jan. 1954, Praha)

SO: Monthly List of East European Accession,(EEAL), LC, Vol. 4,
No. 11, Nov. 1955, Uncl.

HORNA, O.

Decade resistances, p. 89, SDELOVACI TECHNIKA (Ministerstvo strojirenstvi) Praha, Vol. 2, No. 3, Mar. 1954

SOURCE: East European Accessions List (EEAL) Library of Congress, Vol. 4, No. 12, December 1955

HORNA, O.

Tesla KZ25-513034 amplifiers, p. 94, SDELOVACI TECHNIKA (Ministerstvo strojirenstvi) Praha, Vol. 2, No. 3, Mar. 1954

SOURCE: East European Accessions List (EEAL) Library of Congress, Vol. 4, No. 12, December 1955

HORNA, O.

Strain gauge bridge HS-5. [illegible].
(ELEKTROTECHNICKY OBZOR, vol. 44, no. 2, Feb. 1955, Praha)

SO: Monthly List of East European Accession, (EEAL), LC, Vol. 4, No. 11, Nov. 1955, Uncl.

HORNA, O.

"Use of the 6CC1 electron tube." p. 212

SDELOVACI TECHNIKA. Praha, Czechoslovakia, Vol. 3, No. 7, July, 1955

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 9, September, 1959
Unclas

HORNA, O.

HORNA, O. Quality of amplifiers for use in homes. p. 16

Vol. 4, no. 1, Jan. 1956
SDELOVACI TECHNIKA
TECHNOLOGIY
Praha, Czechoslovakia

So: East European Accession Vol. 6, no. 2, 1957

HORNA, O.

HORNA, O. Additive mixer. p. 82
The Tesla 621A Opera radio set. p. 91

Vol. 4, no. 3, Mar. 1956
SDELOVACI TECHNIKA
TECHNOLOGY
Praha, Czechoslovakia

So: East European Accession Vol. 6, no. 2, 1957

Horna, O.

Resistance deflectometers. p.176. ELEKTROTECHNICKY OBZOR. (Ministerstvo strojirenstvi a Ministerstvo paliv a energetiky) Praha. Vol.45, no.4, Apr. 1956

Source: EEAL LC Vol.5, No.10 Oct. 1956

HORNA, O.

A quality amplifier for radio receivers. p.149.
(Sdelovaci Techinika, Vol. 5, No. 5, May 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, No. 9, Sept. 1957. Uncl.

HORNA, C.

The ferristor, a new magnetic amplifier.

p. 310 (Sdelovaci Technika. Vol. 5, no. 10, Oct. 1957, Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 2,
February 1958

HORNA, O.

A direct-current electronic millivoltmeter.

P. 14. (SDELOVACI TECHNIKA) (Praha, Czechoslovakia) Vol. 6, no. 1, Jan. 1958

SO: Monthly Index of East European Accession (EEAI) LC Vol. 7, No. 5, 1958

HORNA, O.

TECHNOLOGY

Periodical: SDELOVACI TECHNIKA. Vol. 6, no. 11, Nov. 1958.

HORNA, O. A laboratory-power amplifier. p. 412.

Monthly List of East European Accession (EEAI) LC, Vol. 8, no. 3
March 1959 Unclass.

HORNA, O.

TECHNOLOGY

periodicals: SDELOVACI TECHNIKA Vol. 6, no. 9, Sept. 1958

HORNA, O. Interesting designs of radio receivers. Tr. from the German p. 325.

Monthly List of East European Accessions (EEAI) LC Vol. 7, no. 5 May 1959, Unclass.

HORNA, O.

"Simple measuring instruments." p. 267.

F. "The modified Wien bridge." p. 270.

SDELOVACI TECHNIKA. (MINISTERSTVO STROJIRENSTVI). Praha, Czechoslovakia, Vol. 7, no. 7, July 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 9, September 1959. Uncl.

KLABOCH, L., inz.; DUFEK, Jaroslav, inz.; HAJEK, E., doc., inz.; REZNICEK, I., inz.; ROD, F., inz.; DRDA, J., inz.; MATOUSEK, B., inz.; KOUSAL, P., inz.; MANDA, V.; CAIS, O., inz.; NOVAK, S.; URBAN, S.; HANKE, M., inz.; VOKURKA, V., inz.; FOGL, J., inz.; HROMIR, M., inz.; SOLIN, J., prof., inz.; SLEZAK, A., inz.; TITLBACH, Z., inz.; DREXLER, J., inz.; HORNA, O., inz.; KUPEC, J., inz.

Discussion on tensiometry. Zpravodaj VZLU no.2:37-46, 69-80 '62.

1. Vyzkumny a zkusebni letecky ustav (for Dufek, Reznicek, Manda, Cais, Drexler and Kupec). 2. Statni vyzkumny ustav tepelne techniky (for Klaboch, Rod, Drda, Matousek, Titlbach). 3. Ceske vysoke uceni technicke (for Hajek, Solin). 4. Ustav pro vyzkum motorovych vozidel (for Hanke, Vokurka, Fogl, Hromir). 5. Vyzkumny ustav matematickych stroju (for Horna). 6. Moravan, n.p., Otrokovice (for Kousal). 7. Mikrotechna, Holesovice (for Novak). 8. Zavody V.I.Lenina (for Urban). 9. Svermovy zavody, Vyzkumny ustav (for Slezak).

HORNA, Otakar A., inz., CSc.

Simple source of constant current. Sdel tech 11 no.9:352-353 S '63.

9(2)

AUTHOR: Horna, Otakar A., Engineer

CZECH/14-59-11-14/64

TITLE: Basic Relations for Calculating Transistorized Circuits

PERIODICAL: Sdělovací technika, 1959, Nr 11, pp 418-420

ABSTRACT: In order to facilitate the task of those working with transistor circuits, the author gives in this article some of the most important formulae and relations necessary for the calculation of transistor circuits. He first deals with hybrid parameters. The qualities of transistors are determined to a full extent only by the so-called characteristics, more particularly by the collector characteristic and transmission characteristic (which is the interdependence between the collector current and the current or the voltage of the basis). As far as the transistor merely amplifies the voltage, it can be considered as an active linear quadripole. The features of this fourpole may be characterized by 4 parameters, indicating the relation between the in-

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Basic Relations for Calculating Transistorized Circuits

put voltage v_1 and the current i_1 and the output voltage v_2, respectively the current i_2 (Fig 1). These relations can be expressed in the following hybrid formulae: $v_1 = h_{11}i_1 + h_{12}v_2$; $i_2 = h_{21}i_1 + h_{22}v_2$; where h_{mn} are the so-called hybrid parameters having the following significance: h_{11} = input impedance of the transistor with a short circuit output; h_{12} = factor of the voltage feedback at a no-load input; h_{21} = current amplifying factor with a short circuit output; h_{22} = output admittance with no-load input. Certain producers characterize the transistors with values valid for either a connection with the common basis or with the common emitter (Fig 2). Simplified relations for the calculation of the hybrid parameters from these values are summarized in Table 4. The indices b, e, k, indicate the kind of connection for which the parameters are given. Besides the common European mark-

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ing of the h parameters (indices given in Figures), the marking with the indices i, r, f, o used by some American sources is also given. The formulae in Table 4 are valid if the resistance of the basis r_b is much lower than the resistance of the emitter r_e, if the resistance of the collector r_k is higher than r_e and if the current amplifying factor is much greater than 1. Further, the author describes how to use the hybrid parameters. Table 4 shows that h_k - parameters for a connection with a common collector are as follows: $h_{11k} = h_{11e}$; $h_{12k} = 1$; $h_{21K} = -h_{21e}$; $h_{22k} = h_{22e}$. A schematic diagram of the transistor as a linear quadripole with the loading resistance R_L, the source of exciting voltage e_g and the inner resistance R_g is shown in Fig 7. The features of the whole circuit can be expressed in the formulae Nrs 3-9. With formulae Nrs 4-7 and the values in Table 4 the input impedance Z_1 can be cal-

Basic Relations for Calculating Transistorized Circuits

culated:

$$Z_i = h_{11k} + \frac{h_{12k} \cdot h_{21k} \cdot R_L}{1 - h_{22k} \cdot R_L} \doteq \frac{r_k \cdot \beta R_L}{r_k + \beta R_L} \doteq \beta R_L$$

For the adjustment of the working point, the author writes, so-called stabilization connections are used. The various kinds of stabilization circuits with linear resistances are illustrated in Fig 6. These are essentially circuits through which such a strong negative feedback is introduced for the DC current that the transistor collector current I_k is above all determined by the magnitude of the resistance R_1 and R_4 and is to a certain extent, independent on the parameters of the transistor. The degree of the introduced DC negative feedback is called the stabilization factor S_e. The more S_e is smaller than 1, the less I_k is dependent on the changes of the parameters of the transistor. For a connection with the common emitter the definition is given in

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Basic Relations for Calculating Transistorized Circuits

Fig 5, formula Nr 11 and Refs 4 and 5. Concluding, the author gives a practical example of calculating the stabilization circuit. There are 7 circuit diagrams and 5 references, 3 of which are Czech, 1 Austrian and 1 US.

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S/271/63/000/002/023/030
A060/A126

AUTHOR: Horna, Otakar

TITLE: Printer for output unit of mathematical computers

PERIODICAL: Referativnyy zhurnal, Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, no. 2, 1963, 55 - 56, abstract 2B297 P (Czech. pat. [illegible], 40 m, 29, no. 101250, October 15, 1961)

TEXT: Patented is a printer for a digital computer based on the electric spark method and distinguished by its simplicity, reliability and high speed [illegible] see Figure, consists in the application of a tape-feed mechanism used both for feeding the tape 10 and for rotating the distributor 30 consisting of "type" discs 3 tied to the printing mechanisms 20. The presence of a [illegible] correction shaft 12, between the drum 11 and the distributor 30, as well as the perforated tracks on the edges of the tape 10 and teeth on the drum [illegible] automatically synchronizes the motion of the tape 10 and the rotation of the digit discs 31. The digit discs 31 connected to the printing mechanisms 20 by the pins 40 and auxiliary amplifiers (not shown in Figure) are

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Printer for output unit of mathematical computers

made in the form of groups of capacitors 33, one of the poles of which is grounded through the metal body of the discs and the other is connected to the blades 32 situated on their circumference (in the construction of the discs 31 these capacitors are formed by the location of metallic segments on the surface of the discs separated from the body of the discs by a layer of dielectric). The charging of the capacitors 33 is carried out by switching surfaces 50, and the discharge [illegible] energy to the printing mechanisms 20 is done by the pins [illegible] controlled by the screws 41. The removal of excess charge from the capacitors 33 is carried out by the grounded pin 35. The printing of the [illegible] digit is carried out by charging the appropriate capacitor 33. [illegible] rotation of the distributor 30 discharges through the air-gap 4 to [illegible] printing mechanism 20 (the position of the elements of the unit in the Figure corresponds to the printing of the digit 1). In the course of the revolution of the "digit" disc, the digits 1 may be printed in the following row (under the condition of charging the appropriate capacitor 33 etc.). The printing of other digits is carried out in an analogous manner through appropriately turned digit discs 31. There are 3 figures.

I. P.

[Abstracter's note: Complete translation]

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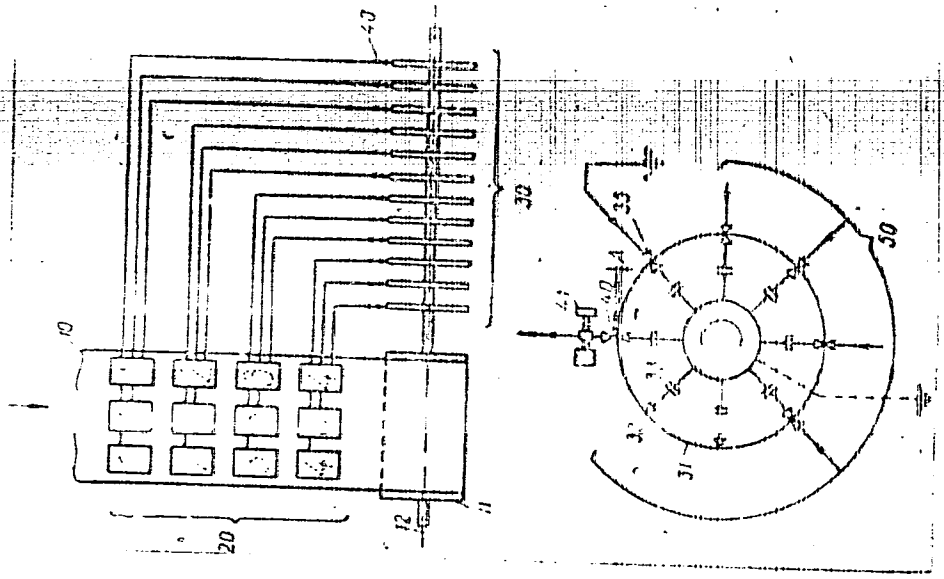
Printer for output unit of mathematical computers

S/271/63/000/002/023/030
A060/A126

Figure.



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B/271/63/000/003/041/049
A06C/A126

AUTHOR: Horna, Otakar

TITLE: Writing head for spark-printing of output data of a digital computer

PERIODICAL: Referativnyy zhurnal, Avtomatika, telemekhanika i vychislitel'naya tekhnika, no. 3, 1963, 58, abstract 3B399 P (Czech. pat., cl. 42d, 3/30, 42m, 29, no. 101252, October 15, 1961)

TEXT: Patented is the design of a printing head for units printing digital data by the electric spark method. The head consists of a net of needle-shaped electrodes connected to a high-voltage source in such a way that every time when a voltage is applied the electrodes form the shape of the digit being printed. The [illegible] consists in that all the end tips are [illegible] thus ensuring the perfection of [illegible]. There is 1 figure.

D. I.

[Abstracter's note: Complete translation]

Card 1/1

HORNA, Otakar, A., inz. CSc.

Short-circuit current-limited power supply units. Sdel tech 12 no.7:262-265 Jl '64

Inexpensive equipment for photographing oscillograms. Ibid.: 268-269

HORNA, Otakar A. inz. CSc.

Transistor noise measurement. Sdel tech 12 no.11:415-417 N '64.

Determining the service life of transistors by the time response of residual current. Ibid.:429

HORNA, Otakar A., inz. CSc.

Remarks on pulse counters with tunnel diodes. Slaboproudy obzor 25 no.10:620-621 O '64.

1. Research Institute of Mathematical Machines, Prague.

L 23946-66 T; IJP(c)

ACC NR: AT5027853 SOURCE CODE: CZ/2503/65/000/011/0067/0084

AUTHOR: Horna, Otakar A. -- Khorna, Otakar A.

ORG: Research Institute for Mathematical Machines, Prague

TITLE: Majority-logic synthesis by topological method

SOURCE: Ceskoslovenska akademie ved. Vyzkumny ustav matematickych stroju. Stroje na zpracovani informaci, no. 11, 1965, 67-84

TOPIC TAGS: majority logic synthesis, topological synthesis method, gate signal, computer programming, Boolean function

ABSTRACT: A topological synthesis method by so-called three input majority gates (3M-gate, i = 2, n = 3) is presented. The method is based on a certain generalization of geometrical interpretation of the Boolean function which has been worked out in Urbano-Mueller paper (A topological method for the determination of the minimal forms of a Boolean function, IRE Trans. on Electronic Computers, vol. EC-5, pp. 126-132 (September 1956)), and papers of A. Svoboda. (Graphical-mechanical aids for the synthesis of relay circuits, Nachrichtentechnische Fachberichte, Beihefte der NTZ, Band 4, pp. 213-218, Fr. Vieweg & Sohn, Braunschweig 1956). The topological synthesis method is based on the fundamental logical property of

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3M-gate which is described as follows: if there are the same signals on two inputs (representing 0 or I), then the output signal of 3M-gate is independent of the signal on the third input (which therefore can be 0 or I). Thus the third input represents a so-called "don't care" condition (x). The "don't care" condition can be considered as either 0 or I in each step of the synthesis if it leads to simpler expansion. The same must be also valid for every "don't care" condition (x- vertex) in the given function f. All functions f are represented in the function Table I by a so-called direct n-cube diagram. The described synthesis method is semi-intuitive, i.e. the result of the synthesis depends considerably on the choice of suitable input-functions f_{ij} of various 3M-gates. As the synthesis procedure is relatively fast and simple and the effect of the selection of every f_{ij} becomes apparent in each step of the synthesis, it is possible to determine the most suitable network configuration for a given purpose. The author states that in spite of basic similarity to the Miller-Winder method (Majority-logic synthesis by geometric methods. IRE Trans. on Electronic Computers (correspondence), vol. EC-11, pp. 89-90 (February 1962)), the described topological method is procedurally simpler and clearer. Furthermore, full use is made of the reduction of arguments in each synthesis and of the given basic majority expansions. As compared with Akers-Robins method (Logical Design with three-input majority gates. General Electric, Electronics Laboratory

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ACC NR: AT5027853

Technical Information, series No. R61ELS-141, 30 (November 1961), see also Computer Design (March, Arpil, May & June 1963)), the topological method is at a disadvantage due to programming difficulties for computer solution. It's application therefore is limited to problems in which the number of Boolean variables is n = 6 to 8. Orig. art. has: 21 figures, 7 formulas and 2 tables. [AM]

SUB CODE: 09, 12/ SUBM DATE: 10Jan64/ ORIG 001/
OTH REF: 011/

Card 3/3 FV

HORNA, Otakar A., inz. CSc.

Interesting receiver circuits. Sdel tech 13 no.1:26-27 Ja '65.

HORNA, Otakar A., inz.

Use of the tunnel diode in high-frequency circuits. Sdel tech 10 no.10:376-379 O '62.

9.7100
9.4330 (1139, 1143, 1150, 1160, 1161)

21881
Z/014/61/000/001/001/009
A205/A126

AUTHOR: Horna, Otakar, A., Engineer

TITLE: The Esaki tunnel diode - a new semiconductor element

PERIODICAL: Sdělovací technika, no. 1, 1961, 6 - 9

TEXT: This is the second part of an article on Esaki tunnel diodes, which describes the application of tunnel-diode characteristics in switching systems (logical and multistable circuits) and relaxation (non-sinusoidal) oscillators. The information contained in this article, is compiled from Western sources. The characteristics of a germanium tunnel diode (product of RCA); the wiring of a bistable tunnel-diode circuit, the basis of several logical and memory circuits (flip-flop); and a wiring with two tunnel diodes, developed for logical (computer) circuitry, referred to in literature as "Gotov twin" (Abstracter's note: could also be spelled Gota or Goto) are explained. The tunnel diodes are fed from 2 sources of symmetrical voltage (E_b) with approximately 200 mv. Characteristics of both diodes, plotted against ground potential, are shown in Figure 5. Curves are intersecting at stable points (-S) and (+S) (positive-resistance region) and at the instable point (S_o) (negative-resistance region). When voltages (E_b)

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The Esaki tunnel diode

are applied, and both diodes are precisely identical, the voltage of point (S) will lie on the level of the ground potential (S_0). In case, both tunnel diodes have sufficiently congruent characteristics, the power and voltage gain respectively, will be considerable, so that the "Gotov twin" can trigger (over a voltage divider) several other "twins", as desired in larger logical networks (electronic computers, digital measuring instruments, etc.). The disadvantage of this wiring is that both, input and output signals are fed to the same point (S) and signal propagation in the circuit cannot be determined as in transistors. This can be avoided by a so-called three-phase logical design. Individual "twins" are fed with 3-phase pulses which overlap during part of their duration. The "twin" with the resistors (R_1, R_2 and R_3) forms a logical majority circuit. Triggered with feed pulses, it switches to the state, in which most of the preceding circuits are. In case resistors (R_1) and (R_2) are fed with positive voltage and resistor (R_3) with negative voltage of the same magnitude, the potential of point (S_1) will also be positive, and the "twin" switches during the feed pulse to the positive side. The logical operation (logical sum and product) can be explained as a special case of "majority function" (i.e. that an appropriate negative or positive voltage is fed to the point (S_1) from the constant voltage source over one of the working resistors). The magnitude and polarity of this auxilliary circuit can effect, that the circuit

The Esaki tunnel diode

switches (e.g. to the positive side), only when a positive voltage is applied also to all other exciter resistors. The author describes also some other applications of "Gotov twins", such as multivibrator circuits for relaxation oscillators, binary stages and frequency calibrators. There are 12 figures and 17 references: 14 Soviet-bloc and 3 non-Soviet-bloc. The reference to the most recent English-language publication reads as follows: L. G. Cox: A tunnel diode crystal calibrator, Journ. Brit. IRE, sv. 20, č 8, str. 621 - 623, srpen 1960.

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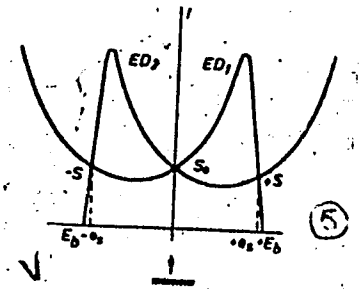
The Esaki tunnel diode

Figure 5: Characteristics of a "Gotov twin"



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HORNA, Otakar A., inz.

Tested transistor circuits. Sdel tech 9 no.6:218-221 Je '61.

27426
Z/014/61/000/009/003/003
E192/E382

6.6000

AUTHOR: Horna, Otakar A., Engineer

TITLE: A transistorized television receiver

PERIODICAL: Sdělovací technika, no. 9, 1961, pp. 331 - 335

TEXT: The receiver was developed at the VÚST A.S. Popov (A.S. Popov Telecommunications Research Institute). The system is furnished with a rectangular picture tube having a diagonal of 43 cm and a deflection angle of 114° (without electrostatic brightness modulation). The receiver is designed for operation in television channels of metre and decimetre range and its noise figure is better than 15 dB. The system can be supplied either from accumulators having an output potential of 20 V or from mains through a suitable rectifying system. The design of the receiver is based on several new types of transistors. Thus, the high-frequency circuits employ mesa-type transistors whose cut-off frequencies are of the order of 500 to 1 200 Mc/s. These transistors are suitable for the high-frequency mixer and oscillator stages operating up to 200 Mc/s. On the other hand, for higher frequencies it is

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A transistorized television receiver

necessary to use a diode mixer and a double intermediate frequency. The intermediate frequency amplifier operating at 40 Mc/s is based on high-frequency diffusion junction transistors whose cut-off frequency is 200 Mc/s. A high-frequency junction transistor is used in the video amplifier but the last stage of this amplifier requires a transistor with a high collector-emitter voltage (about 80 V). The output stage of the line-scanning circuit is based on two high-frequency power transistors having a cut-off frequency of 2.5 Mc/s and a collector dissipation of 8 W (similar to type OC23). The high-frequency stage (except the intermediate frequency amplifier for the sound channel) over the receiver is based on the tuned circuit illustrated in Fig. 1. The tuned circuit is formed by the π-type network which permits the matching of the low base impedance of the transistor Tb and the high collector impedance of Ta ; this is done by choosing a suitable ratio of the capacitance $C_1 + C_k$ to C_2 and C_b . The base capacitance C_b together with C_2 and the capacitors C_1 and C_k form a capacitive

A transistorized television receiver

divider which provides a tuning capacitance for the collector resonance circuit. The resistance R_1, which connects the collector circuit to the supply source, provides a suitable damping for the circuit and limits the collector current. The input circuit of the system for the frequencies up to 220 Mc/s is similar to that of electron-tube television circuits. For the frequency range from 450 to 900 Mc/s a different circuit is employed. This is illustrated in Fig. 4. The circuit operates as a superheterodyne with double mixing; it is provided with a diode mixer D1 and a harmonic generator D2. This ingenious method [Abstracter's note: author's words] makes it possible to extend the operating range of the receiver to 900 Mc/s. The first intermediate frequency of the system is about 200 Mc/s. The input signal is obtained from a symmetrical cable having an input resistance of 300 Ω. The signal is applied to the circuit consisting of inductance L_{27} and trimmer C_{21}. The mixing diode is connected to a portion of L_{27}; simultaneously, a signal from the oscillator is applied to the diode from the coil

Z/014/61/000/009/003/003
E192/E382

A transistorized television receiver

L_{28} . The oscillator is based on the transistor T3 and its output voltage is applied to the diode D2 and then to the circuit $L_{29} - C_{22}$, which selects a suitable harmonic from the spectrum produced by the diode. The intermediate frequency amplifier contains three stages, the first two being provided with automatic volume control. The input of this amplifier is provided with three rejection circuits for the carrier frequencies of the neighbouring channels. The sound channel of the receiver is comparatively simple and is illustrated in Fig. 6. The intermediate frequency in this channel is amplified by a further stage T11 , whose operating point is chosen so that it acts as a limiter. The diodes D3 and D4 are connected as a ratio detector. The transistor T12 operates as a low-frequency pre-amplifier and produces a signal for the transformer-coupled push-pull output stage, which operates in class B and gives a useful power of 600 mW. The most interesting circuit of the receiver (and the most difficult to design) is the line-scan generator. The synchronisation pulses for this generator are taken from the output of the video amplifier. The pulses are

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E192/E382

A transistorized television receiver

applied to the base of an n-p-n transistor, which operates as a limiter with a zero base bias and a low collector voltage. The pulses thus amplified have a constant amplitude. These are applied to an inverter circuit. Equal but opposite voltages are thus produced at the emitter and collector resistances and these are applied to a bridge circuit consisting of two diodes and two resistors. The bridge circuit acts as a phase discriminator which controls the frequency of a blocking oscillator. The frequency of the blocking oscillator is therefore in synchronism (as regards both phase and frequency) with the line-synchronising pulses. The pulses from the blocking oscillator are amplified and limited in a direct-coupled stage based on an n-p-n transistor and are then applied to a driver stage through a transformer. The driver stage controls two switching transistors which are connected in series in order to achieve a high collector voltage and output power. A suitable division of the pulse voltage between the two transistors is achieved by means of two capacitances. A high-power silicon rectifier is used as the efficiency diode in this system. The voltage from the line transformer driven by

Card 5/10

A transistorized television receiver

the switching transistors is applied to the line scan coils and to a high-voltage rectifier diode which produces an output voltage of 15 kV. This is used as the anode supply for the picture tube. An auxiliary winding is also provided on the transformer for producing blanking pulses which are applied to the second grid of the tube. The frame-scan circuit of the receiver is much simpler than the line-scan generator. The supply unit of the receiver is also of interest. This is illustrated in Fig. 8. When the receiver is fed from the mains, the switches S_1 and S_2 are on. In this case, the supply

voltage is produced by full-wave rectification (D10 and D11) of the output voltage of the symmetrical transformer Tr_9.

The rectifier is provided with an electronic filter in order to avoid a large choke and a large smoothing condenser. The filter is formed by the transistors T24 and T25 which form a Darlington circuit whose input receives the ripple voltage through the capacitance C_{91}. This is amplified in T24

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A transistorized television receiver

and T25 and in opposite phase is applied to the filter condenser C_{92} ; in this way, C_{92} is effectively increased to the value of 5 F. When the receiver is supplied from the battery, the switches S_2 and S_4 are in position a . The receiver contains 23 transistors and its performance is comparable with that of the medium-class receivers fitted with electron tubes.
There are 8 figures and 2 non-Soviet-bloc references.

Card 7/10

HORNA, Otakar, A., inz.

Interesting transistor circuits. Sdel tech 9 no.11:424-427 N '61.

HORNA, Otakar, A., inz.

Interesting measurement instruments. Sdel tech 9 no.12:464-468 D '61.

SPALA, M.; RIEDL, O.; JILEK, M.; HORNA, O.

Dosimetry of the thermogenetic effect of the high frequency field and its tolerance dose in rabbits. Sborn. lek. 43 no.12:349-370 D '61.

1. Ustav pro vseobecnou a pokusnou patologii fakulty vseobecneho lekarstvi University Karlovy v Praze, prednosta prof. dr. J. Hejmor IV interni klinika fakulty vseobecneho lekarstvi University Karlovy v Praze, prednosta prof. dr. M. Fucik Ustredni vyzkumny ustav potravinarskeho prumyslu v Praze, reditel inz. Fr. Vones Vyzkumny ustav matematickych stroju v Praze, reditel inz. A. Lukas.

(RADIOMETRY)

HORNA, Otakar; SHCHIPANOVA, T.N.[translator]; RAYEVSKIY, N.P., doktor tekhn. nauk, red.; SHCHUROVA, Yu.P., red.; LARIONOV, G.Ye., tekhn. red.

[Tensometer bridge networks]Tenzometricheskie mosty. Pod red. N.P.Raevskogo. Moskva, Gosenergoizdat, 1962. 333 p. (MIRA 15:10)

(Tensiometers) (Transducers)

HORNA,Otakar A.,inz.

Interesting circuits in transistor radio recievers.
Sdel tech 10 no.1:21-26 Ja '62

HORNA Otakar A., inz.

Interesting audio frequency measuring instruments. Sdel tech 10 no. 3: 102-105. March '62.

HORNA, Oraker A., inz.

Interesting use of Zener diodes. Sdel tech 10 no.4:142-145 Ap '62.

HORNA, Otakar, A., inz.

Unusual circuits using semiconductor elements. Sdel tech 10 no.7:257-259 Jl '62.

HORNA, Otakar A., inz.

Schematic symbols for tunnel diodes. Sdel. tech 10 no.10:390 O '62.

HORNA, Otakar A., inz.

Use of Esaki diodes in switch circuits. Sdel tech 10 no.11:414-420 N '62.

HORNA, Otakar A., inz., C.Sc.

"Tunnel diodes" by Milosz Chmielewski. Reviewed by Otakar A. Horna. Slaboproudy obzor 24 no.3: Suppl: Literatura 24 no.3:L21, L23 '63.

HORNA, Otakar A., inz. CSc.

An interesting receiver. Sdel tech 12 no.5:182-184 My '64.

HORNA, Otakar A., inz. CSc.

Ingenious transistor circuits. Stud tech 12 no. 6:222-223 Je '64.

ACC NR: AP6010947 SOURCE CODE: CZ/0014/65/000/005/0175/0176

AUTHOR: Horna, Otakar A. (Engineer; Candidate of sciences)

ORG: none

TITLE: Transistorized recuperation amplifier for audio frequencies

SOURCE: Sdelovaci technika, no. 5, 1965, 175-176

TOPIC TAGS: transistorized amplifier, audio frequency amplifier

ABSTRACT: The article presents and discusses the circuit of a transistorized recuperation amplifier for audio frequencies. Orig. art. has: 6 figures. [JPRS]

SUB CODE: 09 / SUBM DATE: none / ORIG REF: 001 / OTH REF: 003

Card 1/1

L 34528-66
ACC NR: AP6024774 SOURCE CODE: CZ/0014/65/000/007/0250/0252

AUTHOR: Horna, Otakar A. (Engineer; Candidate of sciences); Panuska, Vaclav (Engineer) 44 B

ORG: none

TITLE: Accurate instrument for measurement of tunnel diode static responses

SOURCE: Sdelovaci technika, no. 7, 1965, 250-252

TOPIC TAGS: tunnel diode, electric measuring instrument

ABSTRACT: The article describes a modified Goodman test set which permits measuring the static characteristics of a diode in its entire range with an accuracy better than 1%, for basic research on circuits with tunnel diodes and for the selection of those diodes for certain circuits requiring close tolerances. Orig. art. has: 7 figures and 12 formulas. [JPRS]

SUB CODE: 09, 14 / SUBM DATE: none / ORIG REF: 002 / OTH REF: 002

L 33683-66

ACC NR: AP6024247 SOURCE CODE: CZ/0014/65/000/011/0410/0412

AUTHOR: Horna, Otakar A. (Engineer; Candidate of sciences)

ORG: none

TITLE: Simple meter for internal combustion engines

SOURCE: Sdelovaci technika, no. 11, 1965, 410-412

TOPIC TAGS: voltmeter, tachometer, metrology, internal combustion engine, pressure measuring instrument

ABSTRACT: The article describes an apparatus consisting of a voltmeter, compression ratio meter and tachometer, intended to supplement other equipment at inspections of motor vehicles, and gives detailed instructions about the methods of measurement. Orig. art. has: 8 figures and 2 formulas. [JPRS]

SUB CODE: 14, 21 / SUBM DATE: none / ORIG REF: 001 / OTH REF: 001

Card 1/1 PB

L 34111-66

ACC NR: AP6005482 (A) SOURCE CODE: CZ/0078/66/000/001/0009/0009

INVENTOR: Horna, Otakar (Engineer; Candidate of Sciences; Prague)

ORG: none

TITLE: Transistorized pulse generator for integrated circuits. CZ Pat. No. PV 4250-65

SOURCE: Vynalezy, no. 1, 1966, 9

TOPIC TAGS: pulse generator, transistorized circuit, circuit breaker

ABSTRACT: An Author Certificate has been issued for a transistorized pulse generator for saturation charge, especially in monolithic integrated circuits. The generator operates near the transistor base, paralleled by a breaker connected to the transistor base, a collector-voltage source, and a collector resistance. The voltage is determined by the following relation:

$$V_6 = \langle I_3 \cdot R_2 + V_{eb} \rangle \pm 0.8\ V$$

where I_3 is the base current while V_{eb} is the voltage across the emitter-base junction. [KP]

SUB CODE: 09/ SUBM DATE: 01Jul65

Card 1/1

PINSKER, Premysl; BULTASOVA, Helena; HORNACEK, Jaroslav; HOBAK, Miroslav

Pathogenesis of adrenal hyperplasia. Cas. lek. cesk. 96 no.42:1325-1333 18 Oct 57.

1. I. interni klinika VLA v Hradci Kralove. Interni katedra Ustavu pro doskolovani lekaru v Praze. Vyzkumny ustav pro farmacil a bichemii v Praze. Ustredni zdravotnicka laborator VLA v Hradci Kralvoe.
P. P., Hradec Kralove, VLA

(ADRENAL GLANDS, dis.
hyperplasia, etiopathogen. (Cz))
(HYPERTROPHY AND HYPERPLASIA, etiol. & pathogen.
of adrenal hyperplasia (Cz))

PINSKER, P.; KORAK, M.; BULTASOVA, H.; HORMACEK, J.

Cortisol metabolism in postnatal adrenal hyperplasia. Cesk. fysiol. 8 no.3: 234 Apr 59.

1. I. interni klinika a Ustredni biochemicka laborator fakultni nemocnice, Hradec Kralove, Interni katedra Ustavu pro doskolovani lekaru, Praha. Vyzkumny ustav pro farmacii a biochemii, Praha. Prednaseno na III. fysiologickych dnech v Brne dne 14. 1. 1959.

(ADRENAL CORTEX, dis.
hyperplasia, hydrocortisone metab. (Cz))
(HYDROCORTISONE, metab.
in adrenal hyperplasia (Cz))

PINSKER, P.; HORAK, M.; BULTASOVA, H.; HORNACEK, J.

Accelerated breakdown of cortisol in postnatal adrenocortical hyperplasia. Cas. lek. cesk. 98 no.23:705-707 5 June 59.

1. I. interni klinika a Ustredni biochemicka laborator fakultni nemocnice v Hradci Kralove, interni katedra Ustavu pro doskolovani lekaru v Praze-Krci a Vyskumny ustav pro farmacii a biochemii v Praze P.P., Hradec Kralove, I. Interni klinika.

(ADRENAL CORTEX, dis.
postpartum hyperplasia, accelerated breakdown of hydrocortisone in (Cz))
(HYDROCORTISONE, metab.
accelerated breakdown in postpartum adrenocortical hyperplasia (Cz))

CZECHOSLOVAKIA

HORNACEK, J., KLADOVEC, J., KRPATOVA, J., Research Institute for Pharmacy and Biochemistry (Vyzkumny ustav pro farmacii a biochemii), Prague, Branch in Rosice nad Labem, Dr, Engr O. NEMECEK, director.

"Methods of Evaluating the Antilipaemic Effect in Vivo and in Vitro in Rats"

Prague, Casopis Lekaru Ceskych, Vol CII, No 23, 31 May 63, pp 641-644.

Abstract [Authors' English summary, modified]: Methods, and their modifications, of evaluating the antilipaemic effect of substances, particularly of the heparin type. They include a test of antilipaemic action in vivo, tests of the activating effect on the clearing system and blood esterases. Interpretation of results obtained by these methods. Eight references, including 3 Czech.

1/1

HORNAK, I.

High altitude climatotherapy of bronchial asthma in children.
Cesk.pediat. 15 no.9:774-776 S '60.

1. Detsky liecebny ustav Strbske Pleso, primar MUDr. Irenej Hornak
(ASTHMA in infancy & childhood)
(CLIMATE ther.)
(ALTITUDE)

HORNAK, M.; URBANEK, M.

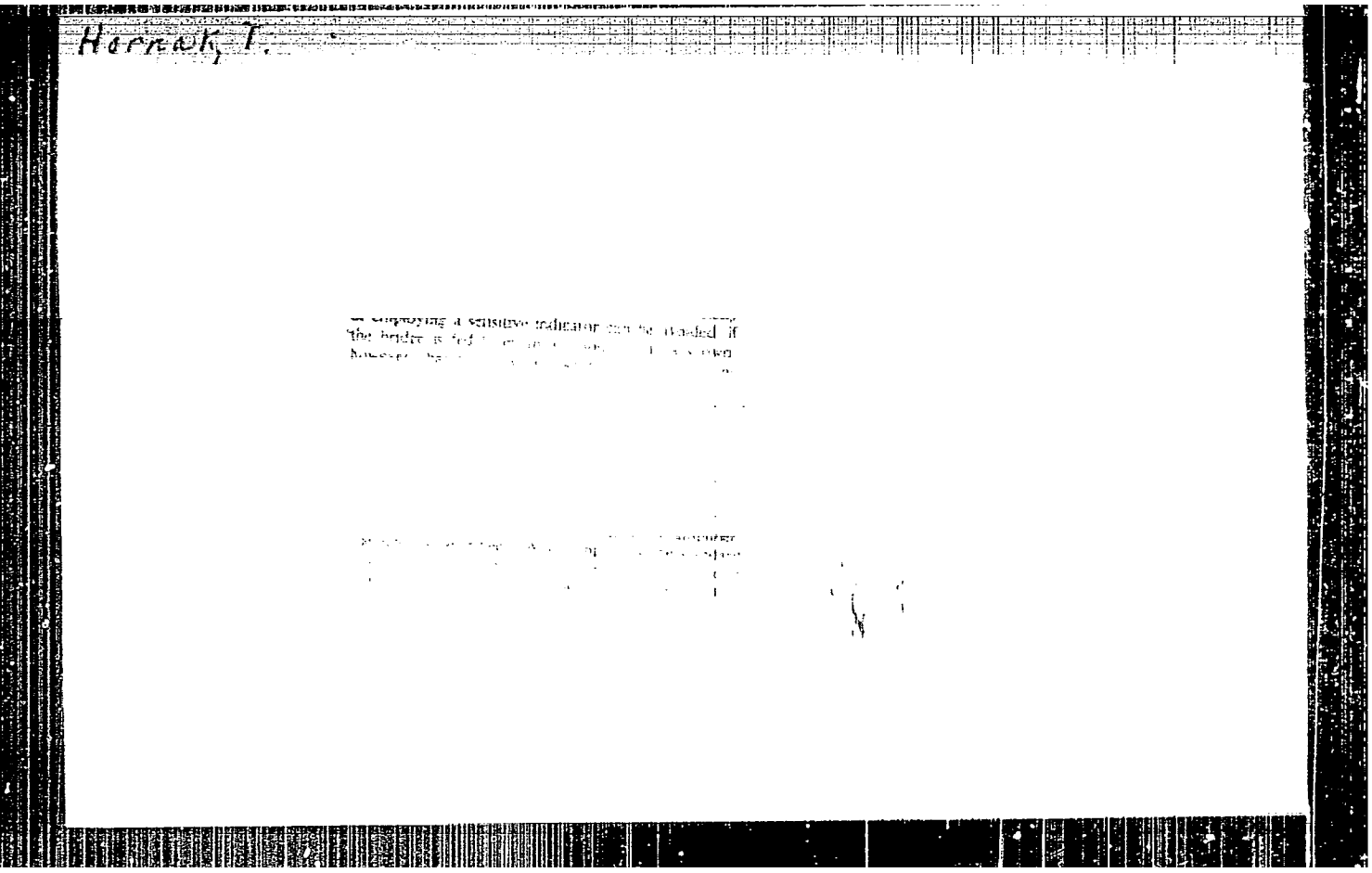
Diverticulum of the urethra in a male. Rozhl. chir. 44 no.6: 401-402 Je '65.

1. Urologicke oddelenie Obvodniho ustavu narodniho zdravi v Trencine (veduci MUDr. M. Urbanek).

ZVARA, V.; HORNAK, M.; JAKES, F.; LABADY, F.; ANGYAL, A.; STEVKA, A.

Results of the treatment of epithelial bladder tumors in the light of 10-year experience. Bratisl. lek. listy 45 no.10: 627-637 30 N '65.

1. Katedra urologie Lekarske fakulty University Komenskeho v Bratislave (veduci doc. MUDr. V. Zvara, CSc.).



HORNAK, T. ; JIRICEK, L.

HORNAK, T. ; JIRICEK, L. Oscillograph used for the observation of very slow phenomena. p. 236

Vol. 4, no. 8, Aug. 1956
SDELOVACI TECHNIKA
TECHNOLOGY
Praha, Czechoslovakia

So: East European Accession Vol. 6, no. 2, 1957

Hornak, T.

Hornak, T. A simple synchronizer for industrial television. p. 364.

Vol. 4, no. 12, Dec. 1956
SDELOVACI TECHNIKA
TECHNOLOGY
Czechoslovakia

So. East European Accessions, Vol. 6, May 1957
No. 5

HORNAK, T.

Contribution to stabilizing the pulse duration in monostable multivibrators. p. 700

SLABOPRUDY OBZOR. (Ministerstvo presneho strojirenstve, Ministerstvo spoju a Vedecka Technicka spolecnost pro electrotechniku pri CSAV) Praha, Czechoslovakia, Vol. 20, no. 11, Nov. 1959

Monthly List of East European Accessions (EEAI) LC, Vol. 9, no. 1, Jan, 1960

Uncl.

HORNAK, Tomas, Inz.

Delayed modulated signals on carrier frequency. Slaboproudy obzor 21 no.3:172-173 Mr '60. (EEAI 9:8)

1. TESLA Vysocany n.p., Vyzkumne a vyvojove pracoviste
(Radio-frequency modulation)

HORNAK, Tomas, inz.

An economical monostable circuit with an LC timing network.
Slaboproudy obzor 21 no.4:239-241 Ap '60. (EEAI 9:8)
(Electronic circuits) (Oscillators)

21150

6.4760

Z/039/61/022/007/001/004
D259/D301

AUTHORS: Horňák, Tomáš, and Jiříček, Lubomír, Engineers

TITLE: A map projector for radar display

PERIODICAL: Slaboproudý obzor, v. 22, no. 7, 1961, 391 - 397

TEXT: This article describes a projector arrangement enabling the superimposition on a radar display screen of additional information, for instance a map. This can be of real assistance in interpreting a radar picture. The example given shows the application of the projector in Czechoslovak air traffic control. In the electronic method described the additional information (i.e. the map picture) is fed into the radar circuitry and it is jointly displayed on the screen. Once set, this ensures perfect coincidence, regardless of scale change, and there is no parallax. The principle used is basically the same as that used in TV for picture scanning. The map is placed into the optical projection path from a special picture tube onto a photomultiplier, the multiplier re-

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A map projector for ...

ceives the light spot modulated by the map, this is then amplified, fed into the radar signal circuits, and projected onto the display screen. The tube supplying the scanning light spot has a flat screen, and is provided with the necessary electronic circuits, e.g. amplifiers, synchronizer, supplies, etc. In practical application, radar set type OR 2 was used. This is of Czechoslovak manufacture, and is intended for air traffic control. The photomultiplier used was also of Czechoslovak manufacture, model 61PK41, cathode diameter 40 mm, 10 stage. A CR tube was used, model 130QP56/M, screen diameter 115 mm, with magnetic focus and deflection, blue screen. The objective used was a 45 mm 1:2 (used at 1:4) Openar. The arrangement consisted essentially of the three following electronic groups: 1) Picture tube with HV source; 2) Time base for the picture tube; 3) Photomultiplier with amplifier, source etc. apart from the necessary control for synchronization etc. Great stability is essential, as any change of the picture between the diapositive and the display would introduce errors in the final reading. The cathode of the CR tube receives the time base signal (circular), its

24150

Z/039/61/022/007/001/004
D259/D301

A map projector for ...

high voltage being supplied by a HF source (10 kV). The time base has a somewhat unusual circuit, to obtain greater picture stability than usual. The circuit is then described and illustrated in the article. The picture tube and photomultiplier are connected in the usual manner, using well known principles. The complete instrument was used for several months, and was in use all day long; the settings were checked daily, by means of some specially selected points of known location, which were compared with the display on the radar set. Stability was good, the variations less than 3 %. It was found advisable to work at a low brightness, because the photomultipliers sometimes have an uneven sensitivity over their surfaces. The 10 kV part worked well and without any trouble. The types of map used to project onto the display are illustrated; one shows 200 km around Prague, the frontiers, and the air corridors, the other shows 60 km around Prague, with the rivers Vltava (Moldau) and Labe (Elbe), and the stacking areas. The authors believe that there are other applications for this system especially in the techniques of regulation and automation, by modifying the system

Card 3/4

24150
Z/039/61/022/007/001/004
D259/D301

A map projector for ...

according to requirements of use e.g. a different time base. There are 8 figures and 2 references: 1 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: Soller, Starr, Valley: Cathode Ray Tube Displays. McGraw-Hill, 1948, 570 - 576.

SUBMITTED: March 24, 1961

Card 4/4

45697

9,3280

Z/039/63/024/001/004/006
E192/E382

AUTHORS: Horňák, Tomáš and Pravda, Bohuslav, Engineers

TITLE: Rectangular pulse-generator with a rise time of 6×10^{-9} s

PERIODICAL: Slaboproudý obzor, v. 24, no. 1, 1963, 25 - 27

TEXT: The circuit diagram of the generator is shown in Fig.1. The instrument is based on known standard circuits, whereby the output signal is produced by successive amplification and slicing of the wave-form generated by an astable symmetrical multivibrator. The multivibrator is based on the second tube (see the figure) and its frequency can be varied from 60 - 400 kc/s by changing the voltage applied to the RC timing circuits. The tube preceding the multivibrator is used to generate synchronisation or triggering pulses of both polarities. The multivibrator is followed by a double triode E_3 whose grids are directly connected to one of grids of the multivibrator. The signal at the anode of E_3 is amplified. The next tube, E_4, is coupled to E_3 by a ^3RC network. The next stage consists of tubes E_5 and E_6 connected in parallel which, together with the output stage E_7, form a

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Rectangular pulse-generator Z/039/63/024/001/004/006
E192/E382

bilateral limiter. The cathodes of E_5 and E_6 are connected together and joined to the cathode of E_7. No AC signal appears at the grid of E_7. The tubes E_5 and E_6 are cut off during the negative half-cycle at the anode of E_4. The tube E_7 is fully open during this interval. The anode of E_7 is taken directly to the output socket and the load. The amplitude of the output pulses is dependent on the wave impedance of the cable used in the anode load and amounts to 5 V across 70 Ω and 10 V for a cable of 150 Ω. There are 5 figures.

ASSOCIATIONS: Výzkumný ústav matematických strojů, Praha (Research Institute of Mathematical Machines, Prague)
Aritma, n.p., Praha (Aritma State Factory, Prague)

SUBMITTED: August 2, 1962

Card 2/3

HORNAK, Tomas, inc.

Nanosecond pulse measuring equipment. Slaboproudy obzor 24 no.12:697-705 D'63.

1. Vyzkumny ustav matematickych stroju, Praha.

L 25852-66 EWP(h)/EWP(l)
ACC NR: AP5021814 (A) SOURCE CODE: CZ/0078/65/000/009/0011/0011

AUTHOR: Hornak, Tomas (Engineer)(Prague)

ORG: none

TITLE: Czech patent no. 592-65 /Device for measuring the charge recovery of fast semiconductor diodes/

SOURCE: Vynalezy, no. 9, 1965, 11

TOPIC TAGS: oscilloscope, [redacted], measuring instrument, semiconductor diode, capacitor, electrode, electronic switch, pulse generator, DC amplifier, [redacted]

TRANSLATION: A device for measuring the charge recovery of fast semiconductor diodes containing a sampling oscilloscope, whose signal input is connected with the circuit of the tested diode, is characterized by the fact that the first capacitor electrode is connected to the vertical sweep amplifier of the sampling oscilloscope and by the fact that the second capacitor electrode is connected with the ground by an electronic switch, whose control input is connected with the output of the generator of contact pulses which is actuated by an auxiliary outlet from the sampling oscilloscope. The second capacitor electrode is also connected with the startup input of the gate pulse generator by a detector circuit, and is further connected by the first gate and by the integrating element to the d.c. amplifier input, which is connected to a meter, and

Card 1/2

L 25852-66
ACC NR: AP5024844

over a second gate to the calibration input of the sampling oscilloscope. The control inputs of the first and second gates are connected with the output of the generator of gate pulses, and the output of the generator of contact pulses is further connected with the picture tube electrode which influences the beam of the tube.

SUB CODE: 09 SUBM DATE: 28Jan65

Card 2/2

L 41130-66

ACC NR: AP6030208 SOURCE CODE: CZ/0039/66/027/003/0129/0133

AUTHOR: Hornak, Tomas--Khornyak, T. (Engineer) 23B

ORG: Research Institute of Mathematical Machines, Prague (Vyzkumny ustav matematickych stroju)

TITLE: Measurement of the value of a limited time integral in a signal with a very high repetition rate

SOURCE: Slaboproudy obzor, v. 27, no. 3, 1966, 129-133

TOPIC TAGS: electronic measurement, oscilloscope

ABSTRACT: The article describes a new method of measurement of a limited time integral in a signal with a very high repetition rate; it makes use of the time transformation of a sampling oscilloscope. The method is highly accurate and stable because the values obtained depend on only a few factors. Orig. art. has: 6 figures and 24 formulas. [Based on author's Eng. abst.] [JPRS: 36,644]

SUB CODE: 09 / SUBM DATE: 01Dec65 / ORIG REF: 003 / OTH REF: 004

Card 1/1 hs UDC: 621.317.7.018.756:621.315.592.001.4

0918 1052

Country : CZECHOSLOVAKIA M
Category: Cultivated Plants. Ornamental.

Abs Jour: RZhBiol., No 22, 1958, No 100537

Author : Hornak, Vladislav
Inst : -
Title : New Varieties of Primula malacoides.

Orig Pub: Ovocnar, a zelinar., 1958,6, No 1, 18-19

Abstract: No abstract.

Card : 1/1

HORNAYI, J., dr.; STEFANICS, J., dr.; FARKAS, I., dr.

Umbilical endometriosis. Magy. onkol. 7 no.1:48-51 Mr '63.

1. Budapesti Orvostudomanyi Egyetem, II. Sebeszeti Klinika.
(ENDIMETRIOSIS) (UMBILICUS) (ADENOCARCINOMA)

HORNCEK, A.

HAVRANEK F., HORNCEK A.

Prehled predesnych porodu na porod. odd. st. obl. nem. v. Hr. Hradisti. /Survey of premature births at Maternity hospital in Hradisti/ Cesk. gyn. 15:1-2 1950 p. 55-65.

1. Of the Obstetric-Gynecological Department of State Regional Hospital in Hr. Hradisti (Head -- Head Physician Fr. Havranek, M.D.).

CLML 19, 1, July 50

EXCERPTA MEDICA Sec 6 Vol 13/11 Internal Med. Nov 59

6590. DYSPROTEINAEMIA IN DIABETIC PATIENTS - Contribuţii la studiul disproteinemiilor la diabetici - Hornet N. and Narly A. Serv. de Boli Intern., Spit. Unif. I, Ploeşti - MED. INTERNA (Bucureşti) 1958, 10/9 (1371-1332) Tables 3

Dysproteinaemia tests and plasma protein electrophoresis were carried out in 30 cases of diabetes; a 10-17% positivity was found for the Takata-Ara test, the Gross test and the Cd test, and a 50% positivity for the thymol turbidity and Weltmann tests; the modifications in the last 2 tests were found to be concomitant with increase of the β-globulins, in relation to the formation of lipoprotein complexes. The findings represent the initial degenerative reaction, particularly of the liver, and the tendency to cicatricial or sclerous repair. Nicolaescu - Bucharest

HORNET, N.N., dr.; FARCHI, A., dr.; RUSS, M., dr.; NUTU, J., chim.

Metabolic disorders in obesity. Med. intern. (Bucur) 16 no.9:1079-1090 S '64.

1. Lucrare efectuata in Serviciul de boli interne (medic sef: dr. M. Russ) Laboratorul policinici nr. 10, Bucuresti (medic sef: dr. E. Sandulescu).